

**REMARKS**

The November 23, 2004 Office Action has been reviewed and its contents carefully noted. Favorable reconsideration of this case is respectfully requested. Claims 1-48 are currently pending. Claims 16-48 have been withdrawn from consideration while claims 1-15 are currently under examination. Claims 1-15 have been cancelled and new claims 16-32 have been added.

New claims 16-32 modify claims 1-15 to conform to U.S. practice and contain no new matter. Support for these new claims may be found throughout the specification, as originally filed.

**Claim Objections**

The Examiner has objected to claims 4-14 under 37 C.F.R. 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim.

Applicants have addressed the Examiner's objections and removed the multiple dependencies from the claims.

**Claim Rejections – 35 U.S.C §112**

The Examiner has rejected claim 1-3 and 15 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants have amended the claims addressing the issue of indefiniteness.

**Claim Rejections – 35 U.S.C. §103(a)**

The Examiner has rejected claims 1-3 and 15 under 35 U.S.C. §103(a) as being unpatentable over U.S. 6,524,362 to Eichberger et al. (“Eichberger”) in view of U.S. 6,241,798 to Dimitrov et al. (“Dimitrov”) stating that even though Eichberger does not teach electric arcs obliquely directed toward the metal melt, arrangement of the electric arcs around a central region is conventional as evidenced by Dimitrov.

MPEP §2143.01 states

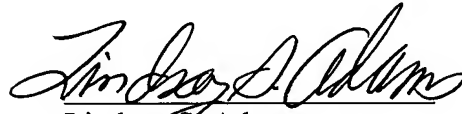
Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . .The mere fact that references can be combined or modified does not render the resultant combination [or modification] obvious unless the prior art also suggests the desirability of the combination [or modification] (Emphasis in original).

Applicants respectfully traverse the Examiner’s rejection. Eichberger is directed to a process of melting fine grained, direct reduced iron (DRI) in an electric furnace containing a bath of liquid iron and on the liquid iron a foamy slag layer. (Col. 1, lines 6-10). Dimitrov is directed to a process where prereduced iron ore is introduced into the furnace vessel of an electric arc furnace primarily in the form of steel scrap and solid lumpy iron carriers. (Col. 6, lines 32-52). There is no teaching or suggestion in either reference to apply energy by directing electric arcs toward a metal melt and obliquely against a central region of the furnace. As acknowledged by the Examiner, Eichberger fails to teach electric arcs obliquely directed toward the metal melt. Dimitrov discusses electric arcs but makes no mention of electric arcs obliquely directed toward the metal melt. As such, the Examiner has not made out a prima facie case of obviousness.

Because from the facts derived from the references, as previously set forth, there was no suggestion in the prior art to make the suggested combination or modification, the rejection is unsupported by the art and should be withdrawn.

Applicants respectfully submit that this application is in condition for allowance. Early and favorable action is earnestly solicited. No fee is deemed necessary in connection with the filing of this Amendment. However, if any fee is due, the amount of such fee may be charged to Deposit Account No. 50-1145.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Lindsay S. Adams", written over a horizontal line.

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